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Viola Selkirkii, Pursh.—Oxford. Rare.

Hypericum pyramidatum, Ait.—Common along the Chenango River.

Mollugo verticillata, L.—Uncommon. Beginning to be introduced along railroads.

Acer saccharinum, Wang., var. *nigrum*, Gray.

Trifolium agrarium, L.—Quite firmly established.

Melilotus alba, Lam.—Beginning to be introduced along the Chenango River.

Potentilla palustris, Scop.—Borders of ponds, Preston.

Linnæa borealis, Gronov.—Oxford. Rare.

Valerianella radiata, Dufr.—Oxford. In an alluvial meadow, near the old Chenango Canal, and possibly introduced from it.

Cichorium Intybus, L.—Occasional at roadsides.

Andromeda ligustrina, Muhl.—Locally abundant on dry hills.

Chimaphila maculata, Pursh.—Oxford. Rare.

Pentstemon pubescens, Solander.—Not common.

Veronica Buxbaumii, Tenore.—Occasional in gardens.

Monarda fistulosa, L.—Preston. Locally abundant.

Mertensia Virginica, D C.—Uncommon. Banks of Chenango River.

Polemonium cæruleum, L.—Abundant on the borders of several small swamps, and in wet meadows, in Preston and McDonough, near East McDonough.

Euphorbia Peplus, L.—Not common, but abundant where found.

Humulus Lupulus, L.—Plainly indigenous on the Chenango River.

Arisæma Dracontium, Schott.—Not common.

Scheuchzeria palustris, L —Rare. Preston.

Habenaria blephariglottis, Hook.—Rare. Smithville.

Listera cordata, R. Br.—Rare. Smithville.

Corallorhiza innata, R. Br.—Rare. Oxford.

Smilacina trifolia, Desf.—Rather common in peat-bogs.

Erythronium albidum, Nutt.—Oxford. In an alluvial meadow near the village, a patch of perhaps fifty plants, growing with *E. Americanum.*

Camptosorus rhizophyllus, Link.—Oxford. Local.

Botrychium matricariæfolium, A. Br.—Common.

Botrychium lanceolatum, Angs.—Rather common.

FRED. V. COVILLE.

Botanical Notes.

Kalmia angustifolia.—Mr. Walter Hayden, who has resided for some time in the Hudson's Bay Territory, states that the twigs, with leaves and flowers of this plant are used by the Cree Indians in bowel complaints and as a tonic. Their name for the plant is *wisukapuk*, 'bitter leaf.' The leaves of the allied *Kalmia latifolia* are said to possess poisonous, narcotic properties, and to prove fatal to sheep and some other animals, although they are eaten with impunity by deer, goats and partridges. Dr. Barton, in his "Collections," states that the Indians sometimes use a decotion of the leaves to destroy themselves. It is pointed out in the U. S. Dispensatory that

Kalmia angustifolia probably possesses properties identical with those of *K. latifolia*. It is remarkable, therefore, that it should be used as a tonic by the Crees. The coldness of the climate of Canada, may however, modify the development of the poisonous principle, if the plant really possesses any.

Spicate Inflorescence in Cypripedium insigne.—At a recent meeting of the Philadelphia Academy of Natural Sciences, Mr. Thomas Meehan referred to specimen before him, of *Cypripedium insigne*, an orchid from the cooler parts of the East Indies, which had a spike with two flowers and other undeveloped buds, the normal character being a one-flowered scape. These departures from the normal form, he said, afforded valuable lessons, though frequently passed over as mere freaks of nature. A spicate infloresence was a common characteristic in allied species. From the present illustration we might infer that the one-flowered kinds were species in which the power to develop a proper spike had been arrested. We might expect to see attempts at this form of inflorescence in *Cypripedium acaule* of our own country.

A very important lesson from these occasional departures had but recently had the attention given to it that it properly deserved, and that was that whenever any particular plant departed from its normal form, there came into existence other characters, which, in a separate plant would, and often did, obtain for the new departure the rank of a species. In this instance, the second flower on the spike was different from the lower and normal one in the upper segment of the perianth (sepals) having a regular outline. In the normal form it was so crumpled as to present a trilobed appearance. In the normal form the labellum was so elongated as to be three times the length of the column. In the upper flower the labellum was but double the length, giving it a somewhat globular appearance. There were other variations that formed a combination of characters quite sufficient to mark a species if they were constantly produced in a separate state. Why could not this rare occurence become a continuous one, and thus a new species be formed—created, we may say—out of an older one? There can be no reason why not. We may call this a freak of nature, but it could not have occurred without that combination of circumstances which we call law. We have no warranty for saying that a law which has operated to produce a departure in a solitary instance like this, might not have a more permanent power at some other time. Nor is there any warranty for believing that a law which has operated as we see here on one plant, might not operate on a hundred, or on all the plants of a district, or even on plants in separate districts widely separated from each other.

Abrus precatorius.—The pretty scarlet seeds of this leguminous plant, known as ‘red bean’ and ‘love pea,’ contain a poisonous principle, and, according to Mr. Boverton Redwood, are used in the Punjab for poisoning cattle. The shell of the seed is removed, the seed softened in water and pounded into a paste, which is then rolled out into little cylinders, about three-quarters of inch long, sharpened at one end. After careful drying, the cylinders are further sharpened by being rubbed on a brick, and are finally soaked in animal fat, and fitted into a wooden handle with their point just protruding. Upon a blow being struck with this weapon, the point, called a *sui*, penetrates the flesh, and being but loosely fitted into the handle, remains in the wound. Death ensues, on an average, in forty-eight hours.

The Continuity of Protoplasm.—Dr. Schaarschmidt has recently pointed out that the continuity of protoplasm is well shown in the pith of the mistletoe, a transverse section of the stem colored with eosin showing the thread, visible as a faint streak almost entirely enclosed by the cell wall, the protoplasm which fills the cell sending six or eight delicate threads through the closing membrane. The continuity is also visible in the cortical parenchyma, and can be determined throughout the entire epidermis.—*Journ. Micr. Soc.*

Homology of the Floral Envelopes in the Gramineæ and Cyperaceæ.—In a paper with this title in the *Journal of Botany*, Mr. T. Townsend attempts to prove that the palea in the floret of grasses is the homologue of the ochrea and utriculus in *Carex*, that the latter is a single floral envelope, and that the seta found more or less developed in many species of *Carex* is the rudimentary development of a secondary axis, while the acicula of Dumortier is the terminal portion of the main axis of the spikelet, so that the seta and acicula are analogous portions of two different axes.

The formation of Oil Receptacles in the Fruit of the Umbelliferæ has been investigated by J. Lange. He finds that they originate from a group of four cells, distinguished from the surrounding ones by their greater refrangibility. They are arranged in the corners of a square with an intercellular space between them, which gradually develops into the oil receptacle. These secreting cells have very thin walls and a clear translucent protoplasm.—*Journ. Micr. Soc.*

The formation of Gum in Wood has been examined by B. Frank in a number of leguminous and rosaceous trees. He finds that it is the universal product of special conditions, and can always be induced by the production of these conditions, as, for instance, by wounding any part of the stem. After four or five weeks the cells of the medullary rays are nearly filled with gum, its formation commencing in the cavities of the vessels and wood cells, which assume a more or less yellow or red color due to small granules resulting partly from metamorphosis of starch grains. The purpose of the internal formation of gum appears to be to form air-tight plugs to the vessels, this oject being aided by the formation of thyllæ or cells inside the vessels.—*Journ. Micr. Soc.*

The Spores of Lycopodium.—Mr. D. H. Galloway, of the Chicago College of Pharmacy, has made some measurements of the spores of *Lycopodium* with the following results: He made careful measurements of 50 spores and found their average diameters to be seven six-thousandths of an inch, the largest having a diameter of eight six-thousandths and the smallest six six-thousandths of an inch. It would therefore take 857 of them laid side by side to make an inch in length; to cover a square inch 734,449 would be required; and to fill the space of a cubic inch 629,422,793. Or, in terms of the French system, a row one centimetre in length would contain 343 spores; a square centimetre, 117,649, and a cubic centimetre, 40,353,607. On measuring the capacity of one of Powers & Weightman's dram morphine bottles he found that it was almost exactly $40^{\text{cc.}}$, therefore one of the bottles would contain 1,614,144,280 of these spores. The same bottle will hold 10,600 flax-seeds, 350 cubeb-berries, 250 grains of allspice, 66 *Coculus Indicus* seeds, 20 nux-vomica-seeds, 4,200 canary-seeds, 8,400 dill-seeds, 2,900 grains of paradise, 1,250 hemp-seeds, 500 black pepper berries, 661 white pepper berries, 3,250 stramonium-seeds, and 100 pumpkin-seeds. It will thus be seen that one hemp-seed equals in size 1,291,315 lycopodium spores.—*Western Druggist.*

Cowania Havardi.—Mr. Watson wishes us to state that the species described by him under this name in the *Proceedings* of the Amer. Acad. Arts and Sciences, xx., p. 364, is *C. ericæfolia*, Torr., collected previously only by Parry in the same region, and his specimens probably only in the Torrey herbarium.

Proceedings of the Torrey Club.—The regular meeting of the Club was held at Columbia College, Tuesday evening, April 14th, the President in the chair and 25 persons present.

Mr. J. F. Kemp read a paper upon the Winter Flora of the Bermudas.

Mr. Thos. Hogg gave an account of the flora of Nassau.

Dr. Britton exhibited stem of *Nesæa verticillata*, HBK., covered with a spongy parenchyma. Miss Knight exhibited and remarked upon gold fish that had succumbed to an attack of *Saprolegnia ferax.*

Two persons were elected active members.

Correct and Incorrect Addresses.—The recent receipt, in a round about way, by the Editor, of a letter which had been mailed to him some weeks previously, leads him to give the following directions in regard to addressing communications: All communications for the Bulletin, all business matters relating to it, and all exchanges should be addressed simply to W. R. Gerard, 61 Clinton Place, New York. Please omit the useless words "Editor of the Bulletin of the Torrey Club." Communications for the Treasurer should be addressed for W. H. Rudkin, 74 William St., New York. Communications to the Club should be sent to the Secretary, Arthur Hollick, New Brighton, N. Y. Specimens of plants for the Club should be sent to Dr. N. L. Britton, School of Mines, Columbia College, New York.

Since we cannot, by letter, impress upon the minds of news agents that the Bulletin has no business office, we shall ask them in print to address no letters to the "Torrey Botanical Club," or "Bulletin of the Torrey Botanical Club," or "Torrey's Botanical Bulletin," or "Publisher of the Torrey Bulletin." Letters so addressed may, through the perseverance of some letter-carrier, finally reach their destination, but they stand an equal chance of going to the Dead Letter Office.